

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. **(canceled)**

2. **(currently amended)** The PSIP converter of claim [[1]] 3, further comprising:

a TS receiver for receiving the terrestrial broadcasting TS or the satellite broadcasting TS, and transmitting the same to the protocol data extractor;

a TS transmitter for outputting the digital cable broadcasting TS generated by the protocol data inserter to the outside; and

[[a]] said user interface coupled to said protocol data converter for receiving, from the system manager, the information and control data input needed for generating the PSIP/PSI data of the digital cable television broadcasting standard.

3. **(currently amended)** A program and system information protocol (PSIP) converter for selectively receiving a digital terrestrial broadcasting transport stream (TS) or a digital satellite broadcasting TS, converting them into a corresponding digital cable broadcasting TS, and outputting the same, said PSIP converter comprising:

a protocol data extractor for demultiplexing the terrestrial broadcasting TS or the satellite broadcasting TS, extracting audio/video (A/V) data and PSIP/PSI (program specific information) data from the terrestrial broadcasting TS, and extracting A/V data and SI (system information)/PSI data from the satellite broadcasting TS;

a protocol data converter for converting the PSIP/PSI data or the SI/PSI data extracted by the protocol data extractor into PSIP/PSI data of a corresponding digital cable television broadcasting standard;

a protocol data inserter for inserting the digital cable television broadcasting standard PSIP/PSI data generated by the protocol data converter into the A/V data extracted by the protocol data extractor through TS multiplexing, and generating a digital cable broadcasting TS; and

a system controller for checking states of the protocol data extractor, the protocol data converter and the protocol data inserter, and controlling their operation;

~~The PSIP converter of claim 1,~~ wherein the protocol data converter comprises:

a table data manager for receiving the terrestrial broadcasting PSIP/PSI data or the satellite broadcasting SI/PSI data from the protocol data extractor, splitting them according to tables corresponding to the PSIP or the SI and the PSI, and extracting data for generating [[the]] digital cable broadcasting PSIP/PSI tables;

a common protocol data manager for using the data extracted by the table data manager, [[the]] a data input by a system manager through [[the]] an user interface, and [[the]] data stored in a database to configure data needed for generating the digital cable broadcasting PSIP/PSI tables;

a scheduler for outputting control signals corresponding to each table generation period of the digital cable broadcasting PSIP/PSI; and

a PSIP/PSI table generator for generating the digital cable broadcasting PSIP/PSI tables by using the data input by the common protocol data manager according to the control signals outputted by the scheduler, and outputting the same to the protocol data inserter.

4. **(currently amended)** The PSIP converter of claim 3, wherein the PSIP/PSI table generator is arranged for transmitting ~~transmits~~ the digital cable broadcasting PSIP data to a PSIP server through a predetermined network so that the digital cable broadcasting PSIP data are included in the digital cable SI data and transmitted to a subscriber, the PSIP server transmitting the digital cable SI data to the subscriber through an out-of-band channel.

5. **(currently amended)** The PSIP converter of claim 3, further comprising:

a TS data receiver for receiving the terrestrial broadcasting PSIP/PSI data or the satellite broadcasting SI/PSI data from the protocol data extractor; and

a TS packet data generator for configuring the digital cable broadcasting PSIP/PSI table generated by the PSIP/PSI table generator into MPEG-2 TS packets, and transmitting said packets ~~[[them]]~~ to the protocol data inserter.

6. **(currently amended)** A program and system information protocol (PSIP) conversion method for selectively receiving a digital terrestrial broadcasting transport stream (TS) or a digital satellite broadcasting TS, converting ~~[[them]]~~ the selectively received TS into a corresponding digital cable broadcasting TS, and outputting the ~~[[same]]~~ corresponding digital cable broadcasting TS, said method comprising:

(a) receiving a program information description (PID) needed for analyzing the terrestrial broadcasting TS or the satellite broadcasting TS, information needed for protocol conversion, and data for other controls from a user;

(b) converting the terrestrial broadcasting TS or the satellite broadcasting TS into an internally processed bit rate format;

(c) filtering the converted terrestrial broadcasting TS or the satellite broadcasting TS using the PID to extract A/V data and PSIP/PSI data from the terrestrial broadcasting TS and extract A/V data and SI/PSI data from the satellite broadcasting TS;

(d) analyzing and converting the extracted PSIP/PSI data or the SI/PSI data into the corresponding digital cable broadcasting PSIP/PSI data; and

(e) receiving the digital cable broadcasting PSIP/PSI data in (d) and the extracted A/V data in (c), performing TS multiplexing on ~~[[them]]~~ the received digital cable broadcasting PSIP/PSI data and extracted A/V data, and outputting ~~[[them]]~~ the TS multiplexed data in the digital cable broadcasting TS;

wherein the analyzing and converting in (d) comprises:

(d1) splitting the PSIP/PSI data extracted from the terrestrial broadcasting TS or the SI/PSI data extracted from the satellite broadcasting TS according to tables corresponding to the PSIP or the SI and the PSI, and extracting data for generating respective digital cable broadcasting PSIP/PSI tables;

(d2) using the data extracted in (d1), data inputted by a system manager through an user interface, and data stored in a database to configure data needed for generating the digital cable broadcasting PSIP/PSI tables;

(d3) outputting control signals corresponding to each table generation period of the digital cable broadcasting PSIP/PSI tables; and

(d4) generating the digital cable broadcasting PSIP/PSI tables by using the data configured at (d2) according to the control signals outputted at (d3).

7. **(currently amended)** The PSIP conversion method of claim 6, further comprising: including the digital cable broadcasting PSIP data in (d) in the digital cable SI data; and transmitting the digital cable SI data inclusive of the digital cable broadcasting PSIP data ~~transmitted~~ to a subscriber through an out-of-band channel, ~~and transmitting them to the subscriber~~ wherein said including is performed independently of said TS multiplexing at (e).

8. (original) The PSIP conversion method of claim 6, wherein the multiplexing process in (e) comprises:

amending variations of a program clock reference (PCR), and converting the multiplexed TS according to an output bit rate.

9. **(currently amended)** A digital cable television broadcasting system for selectively receiving digital terrestrial broadcasting or digital satellite television broadcasting signals and linking the selectively received signals ~~[[same]]~~ to a digital cable broadcasting network in real-time,

said system comprising:

a plurality of first and second broadcasting signal demodulators for demodulating the digital terrestrial broadcasting signals and the digital satellite television broadcasting signals, respectively, and outputting ~~[[them]]~~ the demodulated signals in terrestrial broadcasting transport streams (TS) and satellite broadcasting TS, respectively;

a plurality of first and second program and system information protocol (PSIP) converters for analyzing the terrestrial broadcasting TS and the satellite broadcasting TS outputted by the broadcasting signal demodulators, respectively, converting a terrestrial broadcasting PSIP/PSI table and a satellite television broadcasting SI/PSI table extracted from the analyzed TS for transmitting program and system information into digital cable broadcasting PSIP/PSI tables of a corresponding digital cable television broadcasting standard, respectively, and outputting a cable broadcasting TS based on the digital cable broadcasting PSIP/PSI tables;

a plurality of broadcasting signal modulators for modulating the cable broadcasting TS outputted by the PSIP converters;

a plurality of up-converters for up-converting the cable broadcasting TS modulated by the broadcasting signal modulators into radio frequency (RF) signals; and

a mixer for mixing the cable broadcasting TS up-converted by the up-converters, and transmitting the mixed cable broadcasting TS, via ~~outputting them to~~ a cable ~~connected~~ to a subscriber;

wherein each of said first and second PSIP converters comprises a protocol data converter which, in turn, comprises:

a table data manager for receiving the extracted terrestrial broadcasting PSIP/PSI table and satellite television broadcasting SI/PSI table, and extracting therefrom data for generating the digital cable broadcasting PSIP/PSI tables;

a common protocol data manager for using the data extracted by the table data manager, data inputted by a system manager through an user interface, and data stored in a database to configure data needed for generating the digital cable broadcasting PSIP/PSI tables;

a scheduler for outputting control signals corresponding to each table generation period of the digital cable broadcasting PSIP/PSI tables; and

a PSIP/PSI table generator for generating the digital cable broadcasting PSIP/PSI tables by using the data inputted by the common protocol data manager according to the control signals outputted by the scheduler.

10. (previously presented) The digital cable television broadcasting system of claim 9, further comprising:

a terrestrial broadcasting antenna for receiving the digital terrestrial broadcasting and outputting corresponding broadcasting signals to the first broadcasting signal demodulator; and

a satellite broadcasting antenna for receiving the digital satellite television broadcasting and outputting corresponding broadcasting signals to the second broadcasting signal demodulator.

11. **(currently amended)** The digital cable television broadcasting system of claim 9, further comprising:

a PSIP server for receiving digital cable broadcasting PSIP/PSI table information generated by the PSIP converters, and including the ~~[[same]]~~ received digital cable broadcasting PSIP/PSI table in digital cable SI data to be transmitted to the subscriber via an out-of-band channel;

an out-of-band channel signal modulator for modulating the digital cable SI data generated by the PSIP server, and transmitting the modulated digital cable SI data to the ~~them to a~~ subscriber through the out-of-band channel; and

an out-of-band channel network controller for controlling the cable SI data transmitted to the out-of-band channel signal modulator from the PSIP server.

12. **(currently amended)** The digital cable television broadcasting system of claim 9, wherein the first PSIP converter further comprises:

a protocol data extractor for demultiplexing the terrestrial broadcasting TS and extracting

audio/video (A/V) data and PSIP/PSI data from the terrestrial broadcasting TS;

[[a]] said protocol data converter for using the PSIP/PSI data extracted by the protocol data extractor to generate PSIP/PSI data of a corresponding digital cable television broadcasting standard in form of the digital cable broadcasting PSIP/PSI table;

a protocol data inserter for inserting the PSIP/PSI data generated by the protocol data converter into the A/V data extracted by the protocol data extractor through TS multiplexing, and generating the digital cable broadcasting TS; and

a system controller for checking and controlling the protocol data extractor, the protocol data converter, and the protocol data inserter.

13. **(currently amended)** The digital cable television broadcasting system of claim 9, wherein the second PSIP converter further comprises:

a protocol data extractor for demultiplexing the satellite broadcasting TS and extracting A/V data and SI/PSI data from the satellite broadcasting TS;

[[a]] said protocol data converter for using the SI/PSI data extracted by the protocol data extractor to generate PSIP/PSI data of a corresponding digital cable television broadcasting standard in form of the digital cable broadcasting PSIP/PSI table;

a protocol data inserter for inserting the PSIP/PSI data generated by the protocol data converter into the A/V data extracted by the protocol data extractor through TS multiplexing, and generating the digital cable broadcasting TS; and

a system controller for checking and controlling the protocol data extractor, the protocol data converter, and the protocol data inserter.